

Applicant: Marple
Application No.: 10/719,425
Request for Continued Examination
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AMENDMENTS TO THE CLAIMS

This listing will replace all prior versions and listings of the claims in the above-identified application:

Cancel claims 1-26

27. (previously presented) An electrochemical battery cell comprising a housing; a negative electrode, a positive electrode and an electrolyte disposed within the housing; and a separator disposed between the negative and positive electrodes; wherein:

- (a) the cell is a cylindrical FR6 type Li/FeS₂ cell with a spiral wound electrode assembly having an electrode assembly interfacial volume;
- (b) the cell has an interfacial capacity of at least 3500 mAh;
- (c) the separator is a microporous membrane comprising polyethylene and has an average thickness less than 22 μm , a tensile stress of at least 2.0 kgf/cm in both a machine direction and a transverse direction, a dielectric breakdown voltage of at least 2400 volts, a maximum effective pore size of 0.08 μm to 0.20 μm and a BET specific surface area of 4.0 to 15 m²/g; and

the cell has a ratio of the cathode interfacial capacity to the electrode assembly interfacial volume of at least 710 mAh/cm³.

28. (previously cancelled)

29. (previously presented) An electrochemical battery cell comprising a housing; a negative electrode, a positive electrode and an electrolyte disposed within the housing; and a separator disposed between the negative and positive electrodes; wherein:

- (a) the cell is a cylindrical FR6 type Li/FeS₂ cell with a spiral wound electrode assembly having an electrode assembly interfacial volume;
- (b) the separator is a microporous membrane comprising polyethylene and has an average thickness less than 22 μm , a tensile stress of at least 2.0 in both a machine direction and a transverse direction, a dielectric breakdown voltage of at least 2400 volts and a maximum effective pore size of 0.08 μm to 0.20 μm ;

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(c) the positive electrode comprises an active material comprising at least 95 weight percent iron disulfide;

(d) the cell has a ratio of the cathode interfacial capacity to the electrode assembly interfacial volume of at least 710 mAh/cm^3 ; and

(e) the cell is capable of providing a discharge capacity of at least 2950 mAh when discharged at 200 mA continuously to 1.0 volt and a discharge capacity of at least 2600 mAh when discharged at 1000 mA continuously to 1.0 volt.